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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,234	12/28/2001	Sung-Won Lee	678-787 (P10118)	9102
28249	7590	10/31/2005	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY -11553			KUO, ALEXANDER E	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/034,234	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Alexander Kuo	<b>Art Unit</b> 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12/28/2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: minor grammar mistakes throughout specification. An instance of one such mistake would be using the word "the" instead of "is" on page 1, line 29. The sentence should read, "... scheme and is unique for each manufacturer."

Furthermore, it is recommended to the applicant that the usage of semicolon be carefully considered. The abstract, for instance, would read better if the section following "The method includes..." was revised to read as such: "The method includes the steps of determining whether a specific service uses at least two links and, when there is transmission date for the service, setting up a sequence number in the transmission packet and transmitting the packet through a link selected from the two links." It should be noted though that the above is only an example of a recommended correction.

Appropriate correction with regard to grammar mistakes in the specification is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-5, 10-12, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Cai.

- Consider claim 1, Cai discloses a base station controller (second ATM switch, column 2 line 27) connected to a base transceiver system (first ATM switch, column 2 line 26). When it is determined that a specific service uses at least two links when there is transmission data for the service (the use of a plurality of low-bandwidth communication links, column 2 lines 27-28), a sequence number is setup in the transmission packet (column 2, lines 38-41) and the packet is transmitted through a selected link among the at least two links (column 40, lines 42-47)

- Regarding claim 2, as previously mentioned, Cai teaches the use of control data within each packet to identify the position of the packet with respect to the rest of the packets (column 2, lines 38-41). He later refers to the position of the packet as the sequence number (column 2, lines 58-60). It is inherent by the use of a sequence number identifying the position of a packet that a step occurs where the sequence number is increased after transmitting each packet, so that the next packet is properly sequenced.

- Regarding claim 3, Cai discloses that the number of links used can be calculated and determined (column 6, lines 58-61). It is thus apparent that if it were calculated that only one link is sufficient for the service needed, Cai's invention would allocate only one link (column 7, lines 8-10) and transmit the packet through that link.

- Regarding claim 4, Cai teaches the link selection method by a round robin basis (rotatively selecting available links, column 6 lines 49-50).

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- Regarding claim 5, the plurality of links includes E1/T1 links (column 4, lines 42-44) and uses an ATM scheme (column 2, lines 19-24) where each link is assigned one virtual circuit (inherent in that each packet is sent via one link, which establishes a new virtual circuit each time a new packet is sent, column 8 lines 46-48). It is further understood that Cai frequently uses "low-bandwidth communication links" in reference to the links between the controller and transceiver system. Furthermore, it is understood to one skilled in the art that E1/T1 links are considered to be "low-bandwidth communication links."

- Regarding claims 10 and 18, the above analysis of Cai reference with respect to claims 1-3 is also equally applied to these broader apparatus and protocol claims. It is further observed that Cai's CPU and SAR module (Figure 5) inherently serve the function of both a memory and controller for the sequencing of packets.

- Regarding claims 11-12 and 19-20, the above analysis of Cai reference with respect to claims 1-5 is also equally applied to these broader apparatus and protocol claims.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-9, 13-17, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cai v. Kapoor.

- Consider claim 6, Cai discloses a communication system where it is determined that a packet is received through a plurality of links with sequence numbers (as explained above). Cai however does not disclose how his communication system handles out-of-order packets. Kapoor teaches a method for ordering out-of-sequence packets (Figure 2) where the received packet is determined to be a to-be-received packet by analyzing a sequence number of the received packet (column 2, lines 54-57). When the received packet is a to-be-received packet, the packet is sent to an upper layer (packet buffer 303, column 2 lines 45-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Cai the out-of-sequence ordering method as taught by Kapoor in order to deal with out-of-order packets that might arise in Cai's system to provide for better service through the lack of delay introduced by late or dropped packets (column 1, lines 56-60).

- Regarding claim 7, the received packet is stored in a reception buffer and a timer is activated when the received packet is not a to-be-received packet (column 3, lines 1-6). Upon receiving the to-be-received packet before expiration of the timer, the timer is inactivated and the received to-be-received packet is processed along with the stored packet in the reception buffer (column 3, lines 25-28).

- Regarding claim 8, the to-be-received packet is abandoned and the stored packet in the reception buffer is processed upon failure to receive the to-be-received packet before expiration of the timer (column 3, lines 15-24).

- Regarding claim 9, the above analysis of Cai reference with respect to claim 5 is also equally applied to this method claim.

- Regarding claims 13 and 21, the above analysis of Cai v. Kapoor reference with respect to claim 6 is also equally applied to these broader apparatus and protocol claims. Kapoor furthermore discloses an ordering service, packet buffer, and processor that serve the same functions as applicant's memory, reception buffer, and controller.

- Regarding claim 14, Kapoor has a timer (304) for counting a time under the control of the controller in order to process packets other than the to-be-received packet.

- Regarding claims 15-17 and 22-24, the above analysis of Cai V. Kapoor reference with respect to claims 6-9 is also equally applied to these broader apparatus and protocol claims.


### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vallee teaches both a method for ATM inverse multiplexing over a plurality of links as well as a method in which round robin is used to choose such links. Shenoï discloses a multiplexing arrangement in a multi-link system, along with a receiver that keeps all out-of-sequence packets. Buchholz discloses a method and apparatus for preserving packet sequencing when received out-of-order.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Kuo whose telephone number is (571) 272-5246. The examiner can normally be reached on Monday through Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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10/28/05